Province of British Columbia
Ministry of Energy, Mines and
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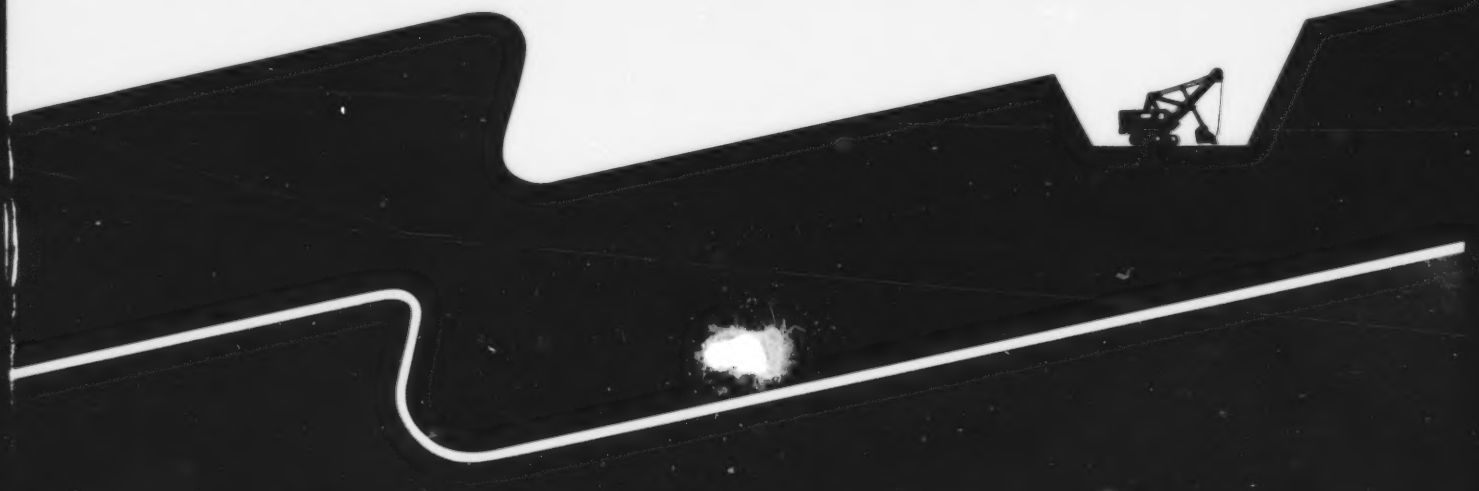
MINERAL RESOURCES DIVISION
Geological Survey Branch



BRITISH COLUMBIA DIMENSION STONE

By G.V. White
and Z.D. Hora

INFORMATION CIRCULAR 1988–6

89-00639/

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A contribution to the Canada/British Columbia
Mineral Development Agreement, 1985–1990

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VICTORIA
BRITISH COLUMBIA
CANADA

March 1988

FOREWORD

Removing a block of granite – Knight Inlet Quarry (June 1987).

Dimension stone is natural rock which has been quarried and shaped to meet specific requirements. The quarried stone may be finished in a number of ways including: ground polished, honed, bossaged, bush hammered, tooled, crenelated, flamed, denteled, polished and/or scab texture. The measures of these terms are given in the glossary at the end of the booklet.

Igneous, metamorphic and sedimentary rocks are used as dimension stone. Typically though, the most common types include granite, marble, limestone, sandstone and slate. Semi-precious varieties include jade and rhodonite.

Suitable stone should be free of irregularities in texture or stains and have an attractive uniform colour. Joints and fractures in the outcrop must be sufficiently spaced to permit extraction of large blocks. Deposits must be near established transportation and preferably near a market and/or finishing plant.

At the turn of the century, British Columbia produced a wide variety of quality dimension stone for both domestic and foreign markets. The industry flourished until the 1930s when many of the producing quarries closed. Today, most dimension stone used in the Province is imported and only minor amounts are supplied from local sources. This publication is designed to increase the awareness of natural stone available in British Columbia and promote significant sources of aesthetically attractive dimension stone with good physical properties and excellent development potential.

This project was funded under the Canada/British Columbia Mineral Development Agreement, a 5-year joint federal/provincial $10 million program to enhance and diversify the British Columbia mineral industry.

For additional information, phone or write:

British Columbia Geological Survey Branch
Ministry of Energy, Mines and Petroleum Resources
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Victoria, British Columbia
V8V 1X4

Inside Front Cover: Revelstoke Courthouse.
Sketch By: Laura Lee Coughlan.

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INTRODUCTION

Loading facility – CANROC Ltd., Delta, British Columbia.

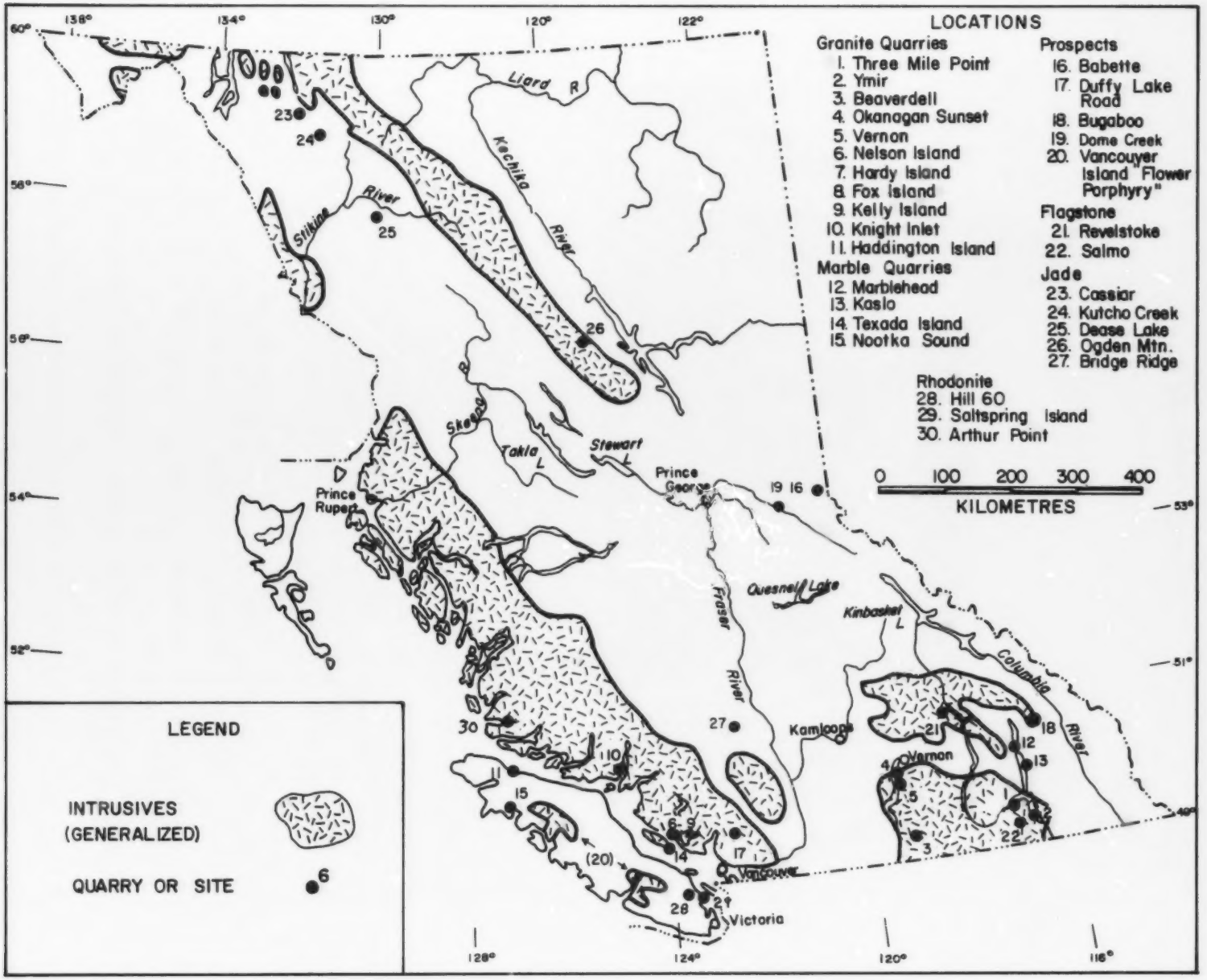
Dimension stone is currently regaining a part of the market lost to other construction materials such as concrete and brick because of its aesthetic appeal, strength, durability and insulating properties. Demand for stone, however, is largely governed by architects and builders who require specific colours or textures and select a particular dimension stone on this basis.

Today in British Columbia only minor amounts of stone are being produced: granite, from quarries near Beaverdell, and on Jervis and Knight Inlets; and small quantities of jade and rhodonite, from selected sites on Vancouver Island and the British Columbia interior. This is in sharp contrast to the turn of the century when a thriving dimension stone industry produced stone used to construct many of the Province's prominent buildings. These buildings attest to both the appeal of the stone and its durability.

In this study many of the now abandoned, formerly producing quarries, were examined to evaluate their development potential and document the stone's physical characteristics. An earlier paper, which dealt with structure and reserve potential, was published in Geological Fieldwork 1986 (MEMPR Paper 1987-1).

The following pages illustrate both the quality and variety of stone available and give an indication of the physical properties* of each type.

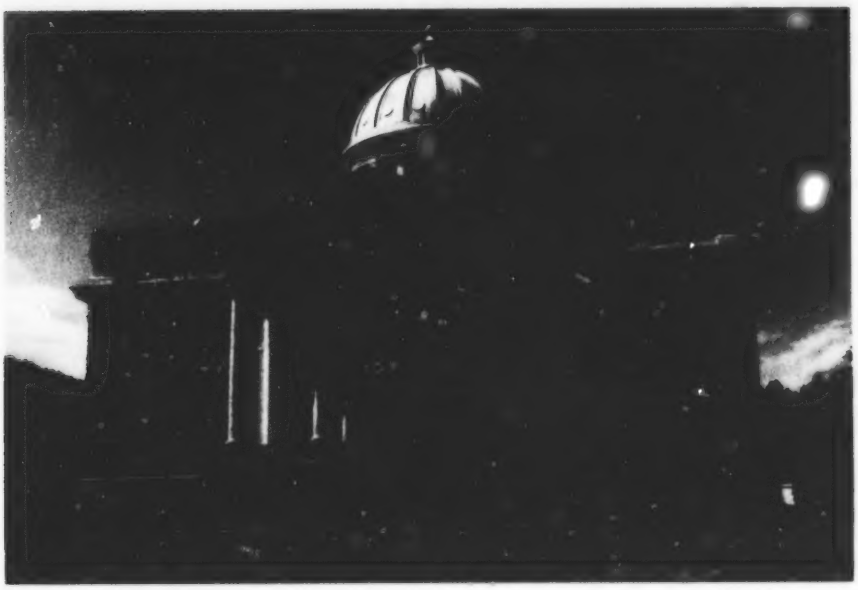
*Reported physical tests are based on results from a limited number of samples and may not reflect deposits as a whole. They are intended as a guide only.



Location map of dimension stone quarries and prospects in British Columbia.

GRANITE QUARRIES (INTERIOR)

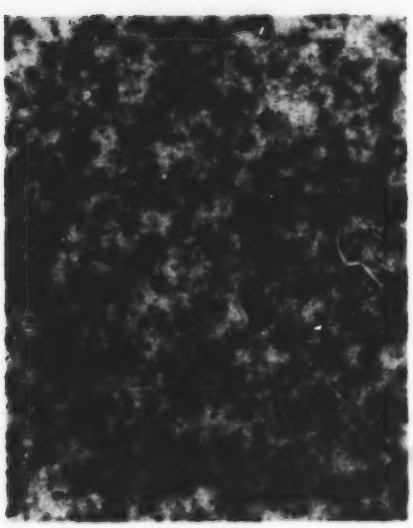
Three Mile Point (82F/11W)



Revelstoke Courthouse – Three Mile Point granite (base) and Marblehead marble (pillars).

An abandoned quarry near Three Mile Point on Kootenay Lake, approximately 2.5 kilometres east of Nelson, provided stone for a number of prominent buildings and the Houston monument in Nelson, B.C.

The granite, part of the Nelson batholith, is porphyritic, with scattered feldspar crystals that locally are up to 2 by 4.5 centimetres. The stone is medium to coarse grained, speckled with black mica (1 to 2 millimetres) and glassy grey to pink quartz crystals (1 millimetre to 1 centimetre) and has a light white to pink tone. Three separate sites were worked in the past and excellent potential for additional reserves of granite exists both along and between abandoned working faces.

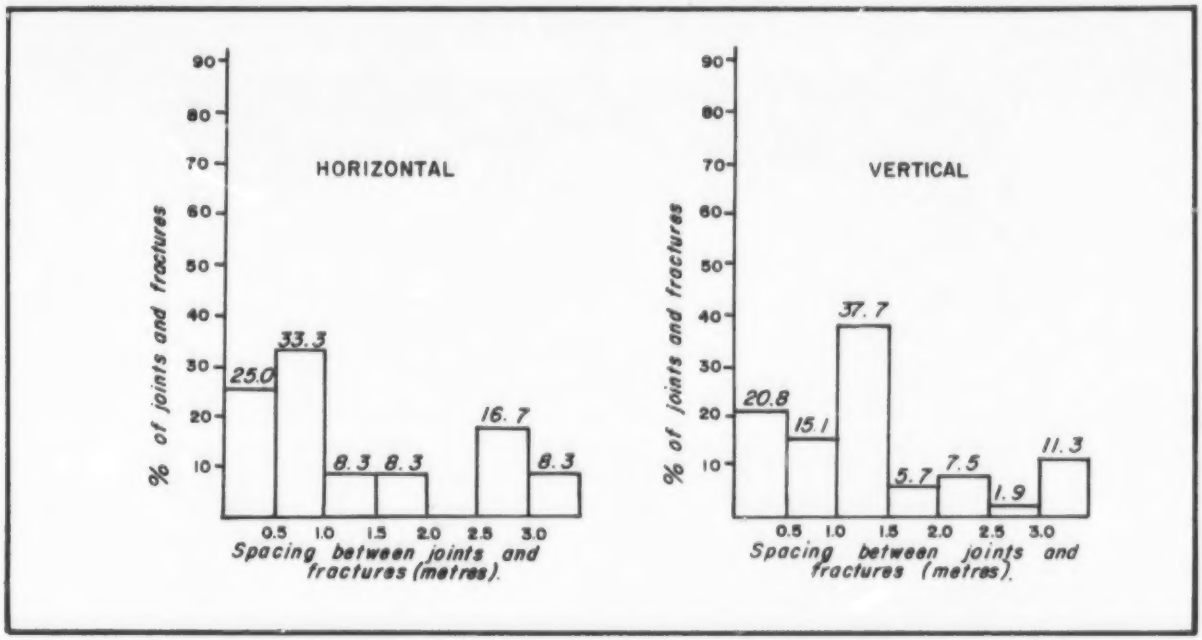


Polished

Honed

Flamed

Ymir Quarry (82F/6E)



Histograms illustrating size of blocks potentially available – Ymir Quarry.

This quarry, located approximately 1.1 kilometres south of the village of Ymir, produced monument and ornamental stone intermittently through the first half of the century. Known locally as "Ymir Pearl", the stone can be seen in Nelson where it was used to construct part of the War Memorial. On fresh surfaces the granite is mauve-grey although euhedral phenocrysts of green to black diopside (1 to 6 millimetres) and black mica (1 to 3 millimetres) darken the tone of the rock. The matrix consists of rectangular feldspars (up to 4.5 centimetres by 3 millimetres) which iridesce a brilliant sky blue when wet or polished. Although this stone has seen limited use, good access from Highway 6 and its close proximity to the Burlington Northern Railway make it a good candidate for development – in particular for interior applications.

Polished

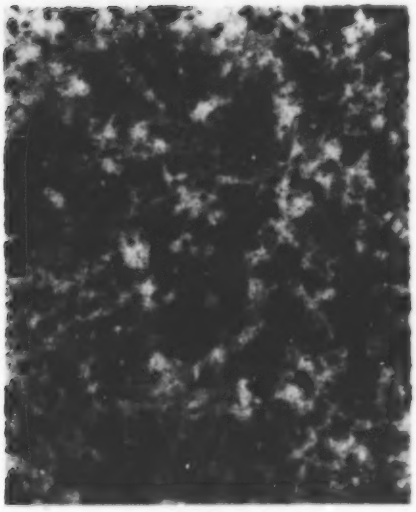
Honed

Flamed

Beaverdell Granite (82E/6E)

Facing on the Royal Bank, Victoria, B.C. – Beaverdell granite.

Marketed under the trade name "Cascade Coral" by CANROC of Delta, B.C., this pleasing coarse pink granite is quarried 13 kilometres south of Beaverdell at a site adjacent to Highway 33 and the Canadian Pacific Railway. The stone is coarse grained and porphyritic with phenocrysts of pink orthoclose feldspar (3.5 by 6 centimetres) common. Large blocks are available on site. This attractive stone is well received by Canadian and American developers who use the granite to decorate both the interior and exterior walls of their buildings.



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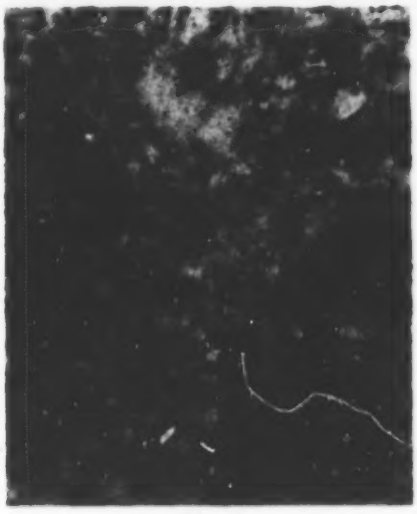

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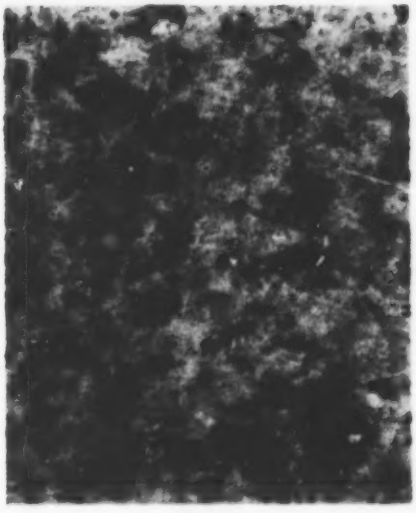


Flamed

Okanagan Sunset Quarry (82L/3W)

Okanagan granite – used effectively in the courtyard of the Royal British Columbia Museum.

A well-defined ridge of granite, 80 metres long, 25 metres wide and up to 20 metres high, extends northeast of an abandoned quarry worked during the 1960s. The site, approximately 4.4 kilometres northeast of Ellison Provincial Park near the east shore of Okanagan Lake, is accessed by road from Vernon. The granite is pale pink, medium grained and contains pink orthoclase feldspar crystals up to 1 centimetre in length. This granite has physical characteristics similar to stone used to build the Vernon courthouse. There is good potential for additional reserves in the area.

Polished

Honed

Flamed

Vernon Quarry (82L/3)

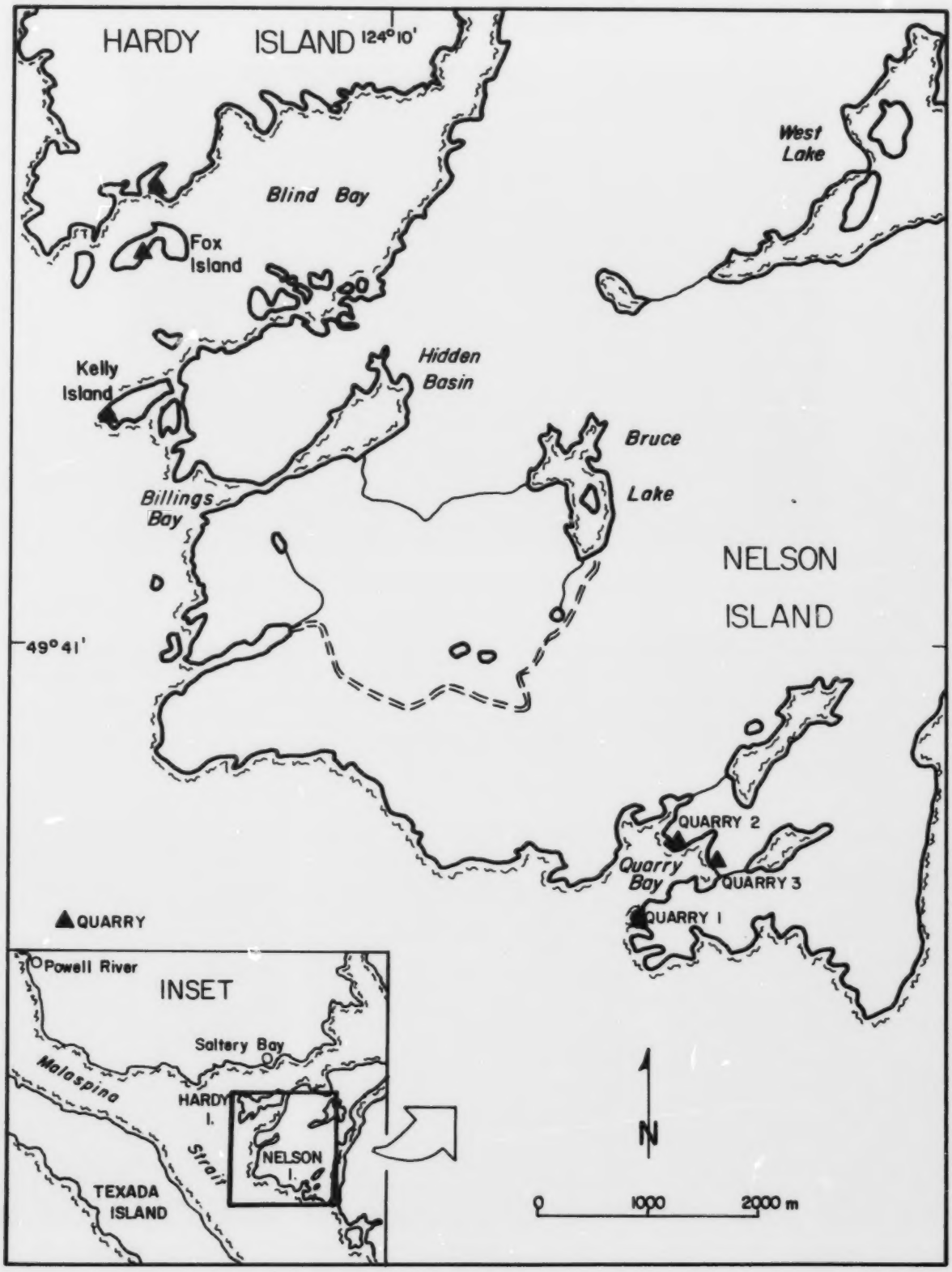
Vernon Courthouse – an impressive use of Vernon Quarry Granite.

A granite quarry on the east shore of Okanagan Lake, 200 metres south of Ellison Provincial Park, provided dimension stone for the Vernon Courthouse. This impressive building, constructed over 60 years ago, attests to both the stone's durability and its aesthetic appeal. The granite is coarse grained with a fresh light pink colour which retains its attractive appearance on exposed surfaces. Past production records indicate blocks 4.7 by 1 by 0.6 metres were successfully removed. Reserves on site are limited but similar stone is available along the shore of Okanagan Lake.

Polished

Honed

Flamed



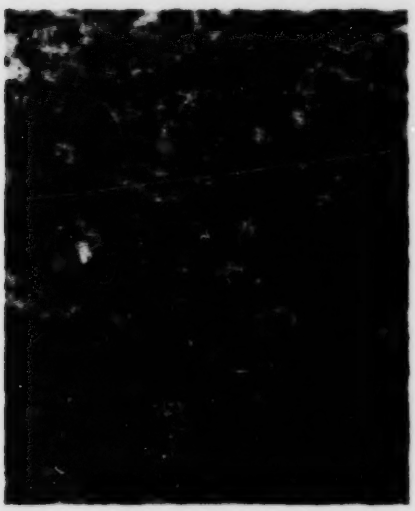
Location map for Coastal Quarries in British Columbia.

GRANITE QUARRIES (COAST)

Nelson Island (92F/9E)

Nelson Island granite forms the base of the Victoria Post Office; the rest of the building is sandstone from quarries on Gabriola and Saltspring Islands.

Four quarries opened in granite are located on Quarry Bay at the southern tip of Nelson Island. They have operated periodically since the mid-1800s, providing stone for a number of buildings in Vancouver, Nanaimo and Victoria – most notably the Parliament Buildings in Victoria. This well-known granite has been exported as far as Australia, Hawaii and California. It has a pleasing light grey colour, a medium texture and a uniform fresh appearance. Large reserves of granite remain on site and widely spaced joints and fractures will permit removal of large blocks. Located on tidewater, this quarry is easily accessible by barge.



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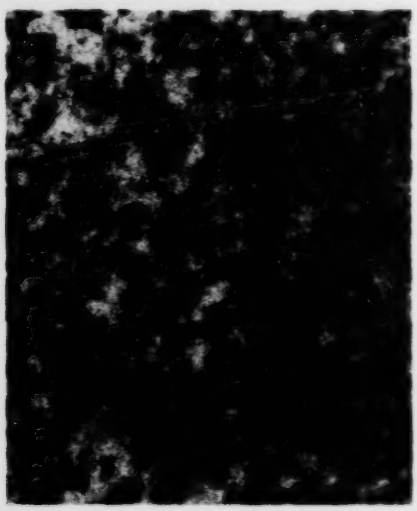

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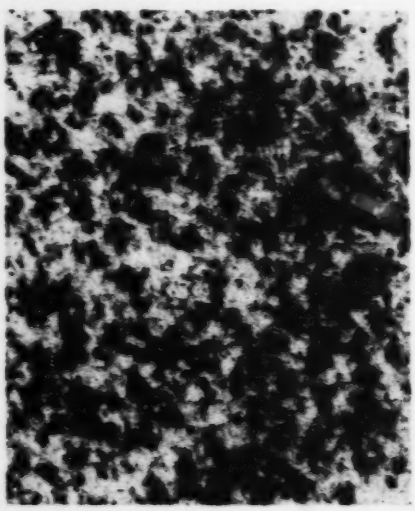

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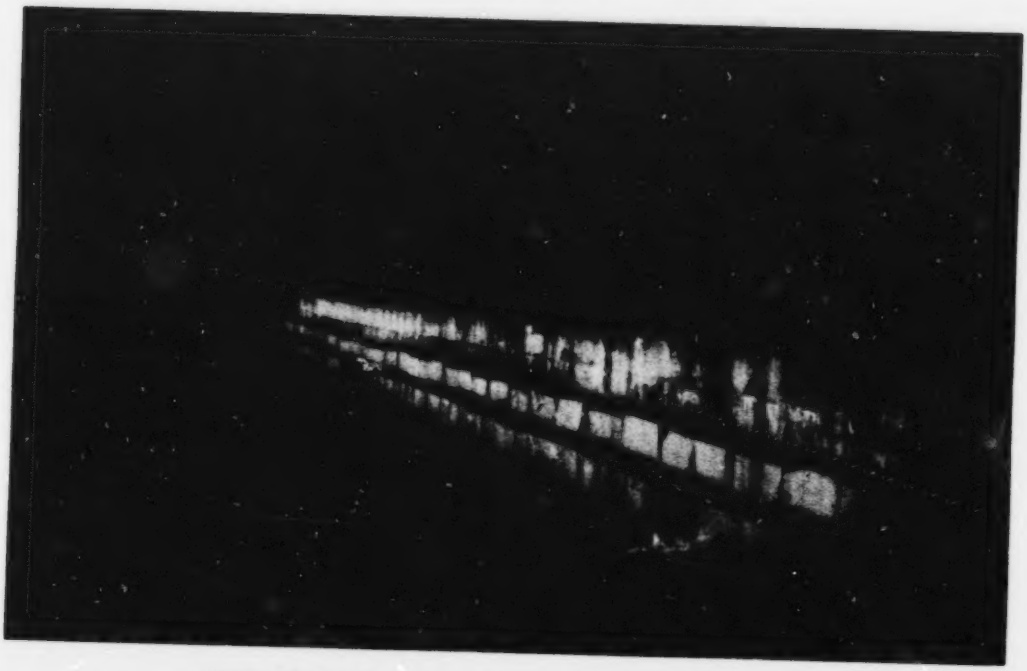
Hardy Island Quarry (92F/9E)



Victoria Harbour Breakwater (Ogden Point) – Hardy Island Granite.

Two abandoned quarries on the southwest shore of Hardy Island provided stone for breakwaters in Vancouver and Victoria. The rock is similar in appearance to granite at Quarry Bay but has a higher percentage of knots which range up to 30 centimetres in diameter. Large reserves of light grey, medium to coarse-grained granite remain in undeveloped benches at both sites and widely spaced joints will permit extraction of large blocks. One large block left on site measures 9.3 by 6 by 5 metres. The quarries are accessible by barge.

Polished

Honed

Flamed

Fox Island Quarry (92F/9E)

Fox Island granite – used in part to construct the Winch Building, Vancouver.
(Photo by L.D. Jones).

A small granite quarry located on the south shore of Fox Island was opened around the turn of the century. The stone, used primarily in the Winch building, Vancouver, is medium grained and light grey in colour. Knots of dark mafic minerals (biotite, hornblende) are up to 10 by 20 centimetres across and less than 0.5 per cent of total volume. Wide spaces between joints and fractures in the quarry and adjacent outcrops indicate that large blocks are available. Potential reserves of dimension stone extend north and west of the quarry, parallel to the shoreline where deep water will permit ready access by barge.

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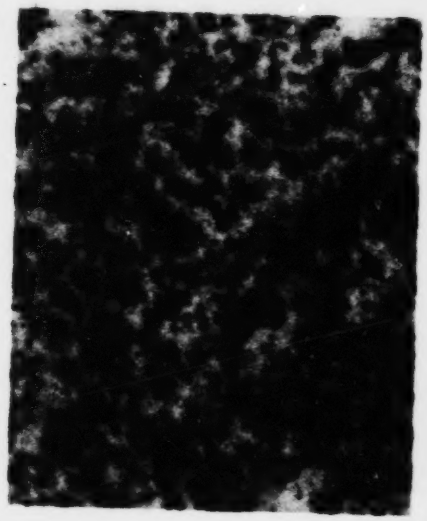

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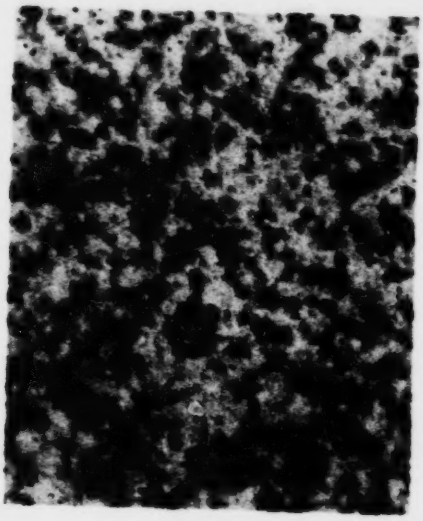


Flamed

Kelly Island (92F/9E)

Kelly Island granite was used (in part) to construct this wall along the Inner Harbour, Victoria.

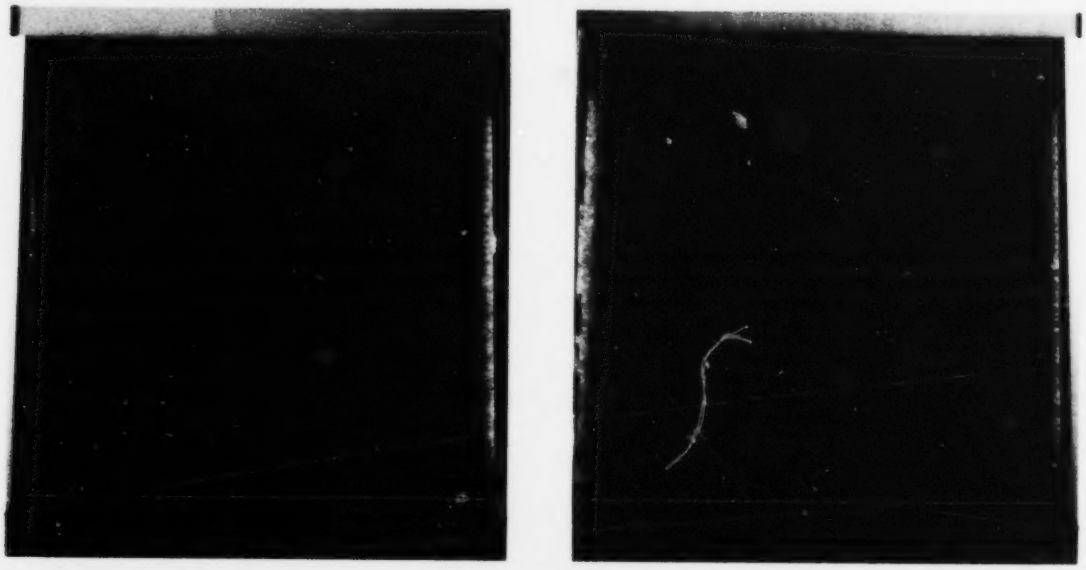
Five quarries on the southwest end of Kelly Island (formerly Granite Island) were developed around the turn of the century. Medium-grained granite from all five quarries is similar in appearance but having more black mica is slightly darker than stone from Nelson and Hardy Islands. Used as a foundation stone in Canada and the United States it was also used to construct the Victoria Harbour seawall because of its durability and attractive appearance. At the quarries, joints and fractures are widely spaced and large potential reserves, accessible by barge, remain. This quarry has excellent development potential.

Polished

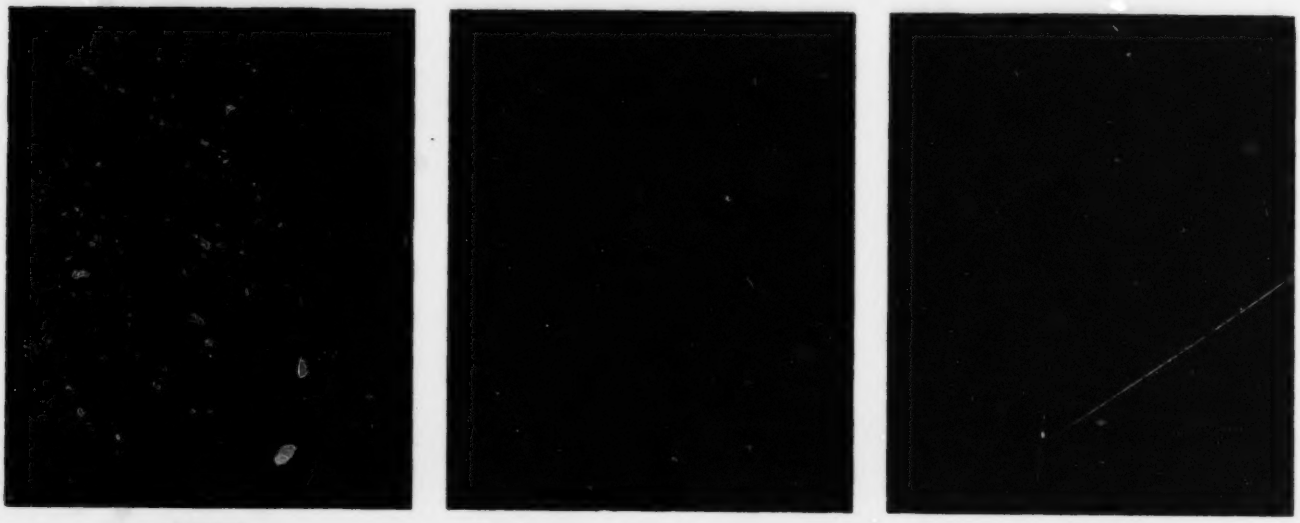
Honed

Knight Inlet (92K/12W)

A dimension stone quarry located approximately 250 kilometres northwest of Vancouver on the north shore of Knight Inlet was opened in 1985 after several years of sampling and evaluation. The quarry has operated intermittently since, producing monumental and ornamental stone known locally as "Catherine Blue Granite". The stone is medium grained and has an attractive blue-grey colour which is darkened by well shaped crystals of hornblende and black mica. Company reports describe reserves of 62 500 cubic metres of fresh, unaltered "granite". Dedication panels at the B.C. Pavillion in Vancouver and the cenotaph on Crescent Beach near White Rock are made of this stone.



Knight Inlet granite was used in the dedication panels – British Columbia Pavillion, Vancouver.
(Photo by L.D. Jones).



Polished

Flamed

Honed

ANDESITE QUARRY

Haddington Island (92L/11E)

Some of the buildings constructed using Haddington Island andesite include:

Victoria

Parliament Buildings
Royal British Columbia Museum
Empress Hotel
British American Trust Company
Bank of Montreal

Grand Forks

Bank of Commerce

Vancouver

Court House
Cotton Building
World Building
Bank of Ottawa
Bank of Montreal (Main)
Bank of Commerce
Merchants Bank
London Building
Strathcona School

This famous quarry, located at tidewater along the southeast coast of Haddington Island, off the northeast coast of Vancouver Island, provided stone for a number of heritage buildings in the lower Mainland of British Columbia and on Vancouver Island. The stone is a fine-grained andesite with an attractive uniform grey appearance. Slight variations in colour occur from bluish grey to greyish yellow and small, evenly distributed feldspar crystals up to 2 millimetres in diameter appear as dark specks. Two large cut blocks of andesite that were left on site measure 2.5 by 2.4 by 1 metres and 2.9 by 1.7 by 1.6 metres respectively, an indication of the size of blocks potentially available. Large reserves remain on site, along the coast north and south of the quarry.

Legislative Building, Victoria – Haddington Island andesite forms the upper part above the columns, Nelson Island granite, the base.

ANDESITE QUARRY

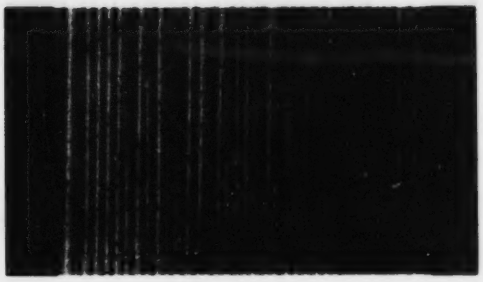
Haddington Island (92L/11E)

Haddington Island andesite – used to construct the Bank of Montreal, Victoria

Bossaged

Honed

Scabbed Texture



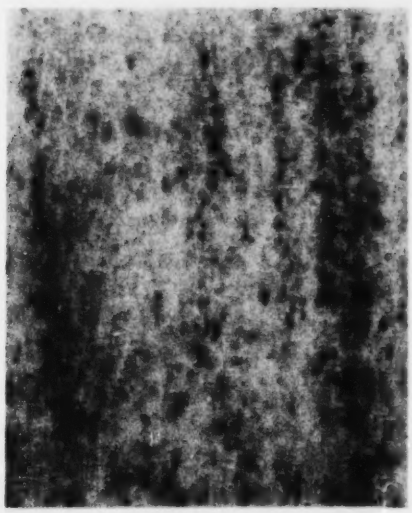
Crenelated

MARBLE

Marblehead Quarry (82K/7W)

Dimension stone in the Bank of Commerce building, Nelson.

About 1900, four quarries in southeast British Columbia, located approximately 3 kilometres north of the Meadow Creek bridge on Highway 31 south of Duncan Lake, produced white to grey-banded crystalline marble. Known locally as "Light Kootenay and "Dark Kootenay" the stone has been used as a dimension stone as far east as Manitoba (Great West Life Assurance Building). The marble is banded and medium grained; it is part of the Cambrian Badshot-Mohican Formation. Joint and fracture density varies with location but large blocks are available; reserves extend west of all four quarries.



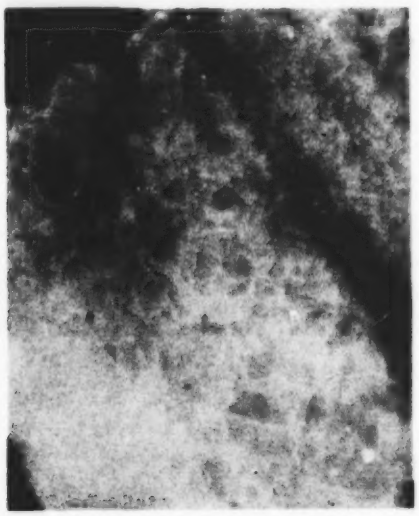
Polished (Light Kootenay)

Polished (Dark Kootenay)

Kaslo Quarry (82F/15W)

Nelson City Hall – constructed (in part) from Kaslo Marble.

Around the turn of the century marble from a small quarry located on the east shore of Kootenay Lake opposite Kaslo was used to construct the Nelson City Hall and other prominent buildings. The stone is coarse grained, with individual crystals up to 16 millimetres in size. It ranges in colour from white to blue-grey although it has a tendency to turn yellow. Examination of heritage buildings constructed from Kaslo marble indicate that the stone is durable; it has not been affected by exposure to the elements. Potential reserves of marble, similar to stone in the quarry, extend north parallel to the lakeshore. Buildings constructed using Kaslo Marble include: Nelson Courthouse, Nelson Post Office, Kaslo Government Building and Grand Forks Government Building.

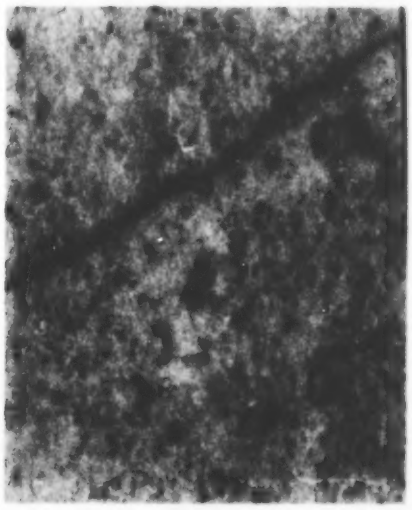


Polished

Honed

Texada Island Marble (92F/93)

Used in the past as a decorative stone, Texada Island marble is found in a variety of colours, from white to maroon. It forms a 1.5-kilometre-long band at the south end of the island. Readily accessed by barge, this crinoidal marble has good potential for use as a coloured aggregate or multicoloured facing stone. The following photographs illustrate some of the varieties and ranges of colours available:



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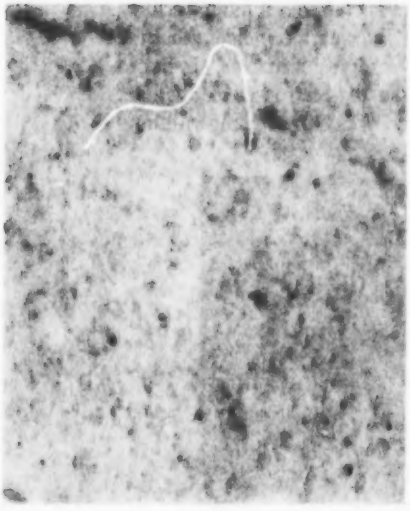

Polished

Texada Island Marble (92F/93) (continued)

Polished

Polished

Nootka Sound Marble (92E/15E)

A small quarry opened in crystalline limestone of the Triassic Quatsino Formation operated on Hisnit Inlet from 1908 to 1909. The marble has an attractive white to light grey colour, is medium grained and is similar in appearance to crystalline limestone from Marblehead. Past records indicate that channellers removed slabs of marble "5 feet by 5 or even 6 feet, probably from blocks obtained at the bottom of the quarry". There is good potential for more reserves elsewhere in the Quatsino limestone between Tahsis and Tlupana Inlets.

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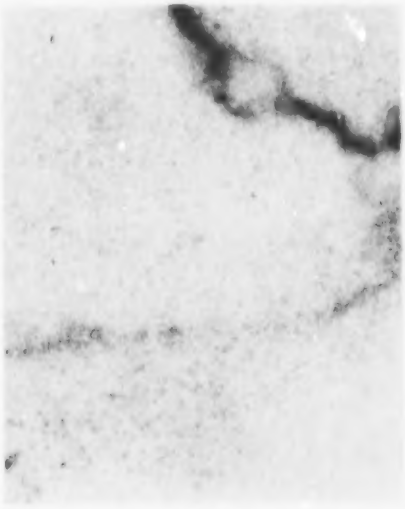


Honed

PROSPECTS — DIMENSION STONE

The following photographs illustrate a number of attractive rock types from undeveloped sites. Their remarkable appearance and physical characteristics qualify them as potential dimension stones. (See map on page 6 for locations.)

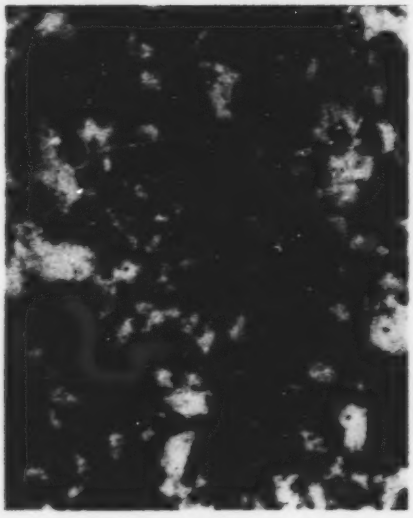
Babette Quartzite

Polished

Polished

Bugaboo Granite

Polished



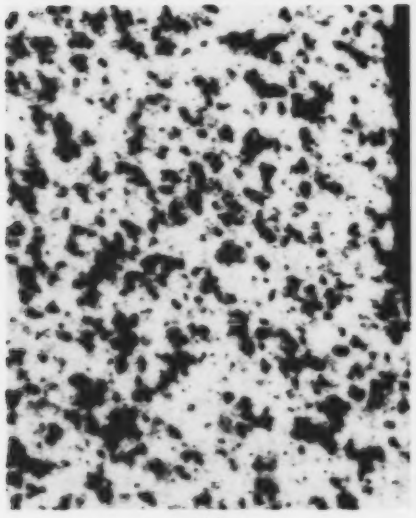
Honed

PROSPECTS – DIMENSION STONE

Dome Creek – Green Slate

Dome Creek Slate – An undeveloped site near Dome Creek on Highway 16 has good potential to produce green slate as flagstone and roofing slate.

Duffy Lake Road – Granite



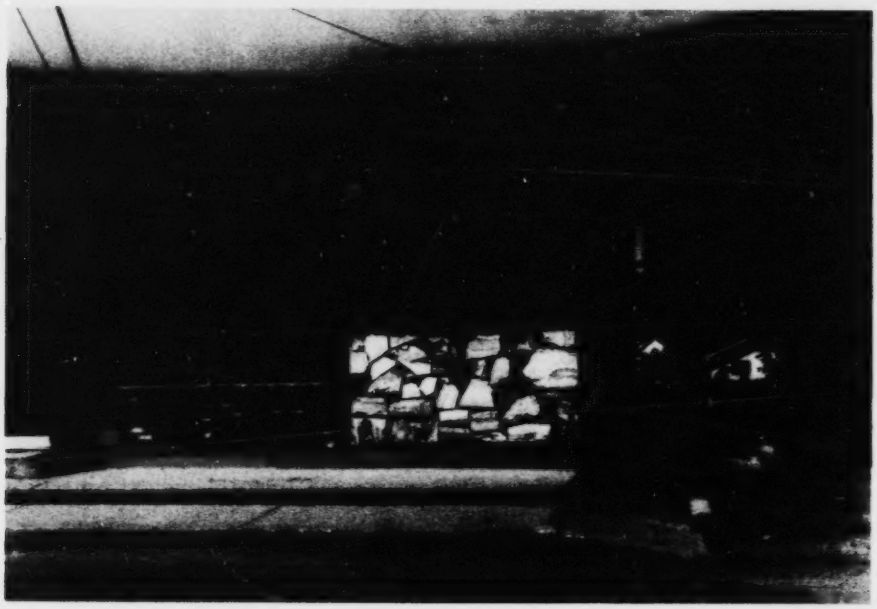
Polished

Vancouver Island Porphyry

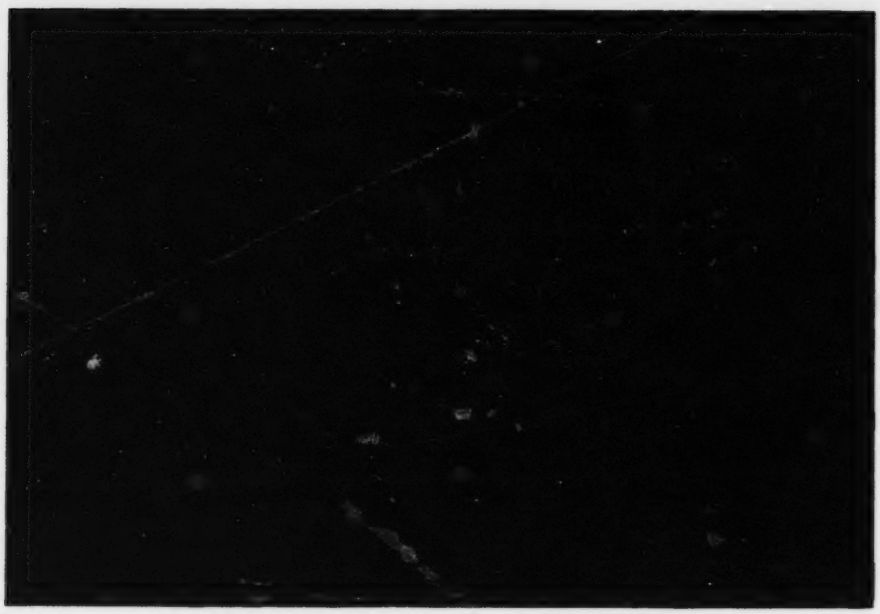
Polished

Flagstone

Flagstone is a hard, even and thinly bedded, often micaceous stone which splits easily and uniformly along bedding planes into thin slabs. Flagstone is used on floors or as a facing stone on buildings. In British Columbia quarries near Revelstoke (micaschist) and Salmo (quartzite) produce two attractive and popular varieties of flagstone.



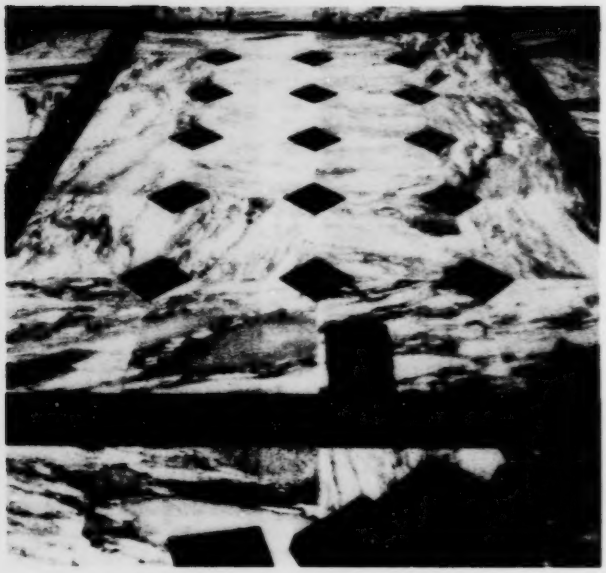
Flagstone (quartzite) – used as a decorative stone in the Salmo Post Office.



Flagstone produced from a quarry near Revelstoke (micaschist) is used as a decorative stone.

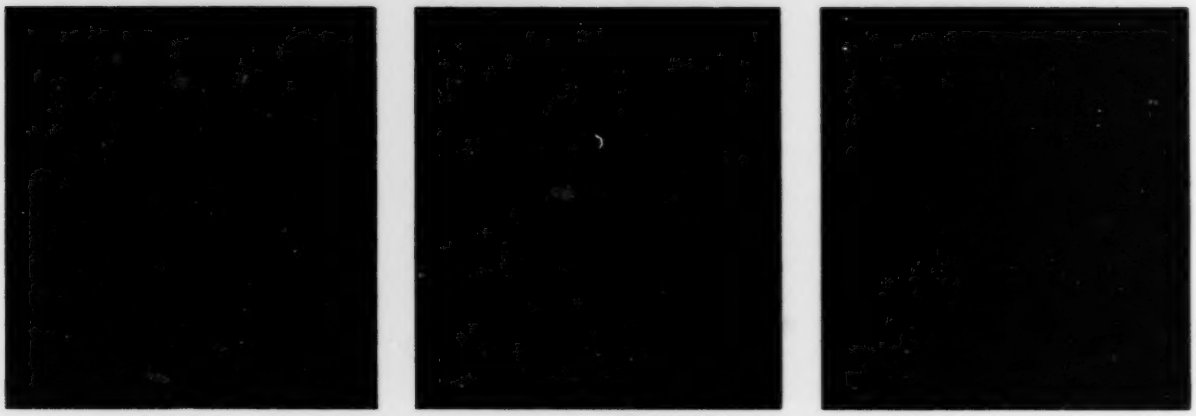
SEMI-PRECIOUS STONES

Jade



Decorative jade tiles.

Designated as the Provincial stone, British Columbia nephrite or jade is in high demand throughout the world as a decorative and ornamental stone. Found at Cassiar, Kutcho Creek, Dease Lake, Ogden Mountain and the Bridge River area, the medium to dark green semi-precious stone is shipped whole or cut into slabs for distribution to world markets. Demand for British Columbia jade is steady, particularly from Pacific Rim countries which often turn the "raw" stone into elaborate carved figures. Use of British Columbia jade as decorative tile is also becoming popular.



Polished tiles of jade.

SEMI-PRECIOUS STONES

Rhodonite

Rhodonite – An attractive ornamental stone.

Small quantities of pale pink to light red rhodonite are produced in British Columbia from selected sites on Vancouver Island and Arthur Point near Bella Coola. Massive rhodonite is cut for necklaces and other types of jewelry, or made into ornaments and carvings.

Polished

Polished

PHYSICAL PROPERTIES OF DIMENSION STONE FROM QUARRIES IN BRITISH COLUMBIA**

Commodity	Quarry Name	Location (NTS)	Specific Gravity	Density lb/ft³	Density kg/m³	Absorption by Weight (per cent)	Compressive Strength PSI	Compressive Strength MPa(x10⁶)	Traverse Strength (Modulus of Rupture) PSI	Traverse Strength (Modulus of Rupture) MPa(x10⁶)
Granite[A] ..	Ymir	82F/6E	2.69*	167.83*	2688*	0.35*	7,581 – 8,514	52.27 – 59.00	1,594 – 1,808	10.99 – 12.46
	Three Mile Point ...	82F/11W	2.656	163.63	2621	0.407	29,406	203	1,708	11.78
	Beaverdell	82E/6E	2.61*	162.63	2605*	0.50*	8,110 – 9,543	55.92 – 65.80	1,151 – 1,460	7.94 – 10.07
	Vernon	82L/3	2.67	164.30	2632	0.354	24,791	171	1,968	13.57
	Nelson Island	92F/9E	2.657	164.82	2640	0.175	34,823	240	2,871	19.79
	Hardy Island	92F/9E	2.703	167.56	2684	0.177	32,288	223	1,453	10.01
	Kelly Island	92F/9E	2.681	166.33	2664	0.178	35,144	242	3,521	24.28
	Knight Inlet		3.05	—	—	0.113	—	—	4,075	28.10
Andesite ..	Haddington Island	92L/11E	2.67	143.41	2297	3.79	18,428	127	1,160	8.00
Marble[B] ...	Marblehead	82K/7W	2.718	168.70	2702	0.179	12,486	86	2,127	14.67
	Kaslo	82F/15W	2.752	171.36	2745	0.99	13,987	96	1,254	8.65
	Nootka Sound	92E/15E	2.721	169.39	2713	0.073	18,992	131	2,349	16.20
	Texada Island (Anderson Bay) ..	92F/9E	2.712	169.00	2707	0.052	18,518	128	2,466	17.00
PHYSICAL REQUIREMENTS — AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)										
Granite		N/A		160 (min.)	2560	0.40 (max.)	19,000 (min.)	131	1,500 (min.)	10.34
Marble (Calcite)		N/A		162 (min.)	2595	0.75 (max.)	7,500 (min.)	52	1,000 (min.)	7.00

*Average of three tests.

Conversion Factors:
PSI → MPa = # x 6.894 757 x 10^3
lb/ft^3 → kgm^3 = # x 16.01846

Physical Tests: Ymir and Beaverdell tests, B.C. Ministry of Transportation and Highways (Geotechnical and Materials Branch).
All other tests results are from Parks (1917).

**Reported physical tests are based on results from a limited number of samples and may not reflect deposits as a whole. They are intended as a guide only.

GLOSSARY OF TERMS

Aggregate — Crushed stone consisting of various-sized fragments that is mixed with a cementing agent to form concrete, mortar, plaster, etc.

Andesite — A dark-coloured, fine-grained volcanic rock that often contains visible crystals of plagioclase feldspar.

A.S.T.M. — The American Society For Testing and Materials, founded in 1898, is a scientific and technical organization formed for "the development of standards on characteristics and performance of materials, products, systems and services and the promotion of related knowledge".

Batholith — A large mass of granite that is predominantly medium to coarse-grained. The surface area exceeds 100 square kilometres.

Bedding — The arrangement of a sedimentary rock into layers of varying thickness and character.

Bossaged — The description of a dimension stone block that has been roughly split so that the central part of the block is higher than the edges.

Bush Hammered — The dimension stone block in which the surface has been broken into a regular series of contiguous hollows 1–3 millimetres deep; the ridges between hollows have a rough split texture.

Coarse grained — Individual grains or crystals in a rock are greater than 5 millimetres in size.

Crenelated — A sawn facing in which there are regular grooves 1–1.5 millimetres deep spaced about 5 millimetres apart.

Crinoidal — The descriptive term for a rock containing skeletal parts of marine animals called crinoids.

Crystalline — The texture of a rock consistency of closely fitting or interlocking crystals that grew from igneous rock as it cooled – example: granite.

Denteled — The surface is made up of grooves 1–4 millimetres deep between which the rough split texture remains.

Dimension Stone — A natural rock which has been quarried and shaped to meet specific requirements for use in the construction, building and monument industries.

Diopside — A mineral with the chemical composition $CaMg(SiO_3)_2$ that varies in colour from white to green; transparent varieties are used to make jewelry.

Euhedral — An individual, well-formed crystal, in an igneous rock.

Feldspars — A group of rock-forming minerals of general formula; $MAl(Al,Si)_3O_8$ where M = K, Na, Ca, and lesser Ba, Rb, Sr and Fe. Feldspars are the most widespread of any mineral group and constitute approximately 60 per cent of most igneous rocks – example: granite.

Fine grained — Individual grains or crystals less than 1 millimetre in size.

Flagstone — A dimension stone which can be split into thin slabs 7–10 centimetres thick.

Flamed — A high temperature jet of flame is passed over the rough surface of coarse grained dimension stone blocks to split off the surface grains.

Formation — A body of igneous, metamorphic or sedimentary rock having an easily recognizable upper and lower boundary that can be traced in the field. It must be thick and extensive enough to be used as a unit for mapping.

Granite (Commercial Definition) — A visibly granular, igneous rock generally ranging in colour from pink to light or dark grey and consisting mainly of quartz and feldspar, accompanied by one or more dark minerals. The texture is typically homogeneous but may be layered (gneissic) or porphyritic.

Grain Size — A description of the dimensions of individual mineral grains that make up a rock.

Ground Polished — A dimension stone in which the facing of the stone has been finely ground to eliminate all irregularities.

Honed — The description of the resulting texture of the dimension stone when a randomly oriented cut is made.

Hornblende — A black to dark green or brown mineral found in many igneous rocks; it is the commonest mineral of the amphibole group: $Ca_2Na(Mg,Fe^{+2})_4(Al, Fe^{+3}, Ti)(Al, Si_8O_{22}(O,OH)_2$. It occurs as distinct columnar, fibrous, or granular crystals.

Igneous — A rock that solidified from molten or partly molten material. Igneous rocks constitute one of the three main classes into which all rocks are divided (that is, igneous, metamorphic, sedimentary).

Iridescence — The exhibition of prismatic colours (producing rainbow effects) in the interior or on the surface of a mineral, caused by interference of light from thin films or layers of different refractive index.

Jade — A hard, extremely tough, compact semi-precious stone consisting of either the pyroxene mineral jadeite or the amphibole mineral nephrite and having an unevenly distributed colour ranging from dark or deep green to dull or greenish white. It takes a high polish and is used for jewelry, carved articles and ornaments.

Joint — A surface of actual or potential fracture or parting in a rock, the joint surface is usually planar. Typically, groups of parallel joints control the size of the dimension stone block that is recoverable.

Knot — Small segregation of darker minerals in granite or other intrusive rocks.

Limestone — A sedimentary rock consisting of more than 50 per cent calcium carbonate.

Mafic — Dark-coloured minerals with magnesium (Mg) and iron (Fe) as major components.

Marble (Commercial Definition) — A crystalline rock predominantly of one or more of the following minerals: calcite, dolomite, or serpentine and capable of taking a polish.

Matrix — The fine-grained interstitial material between larger crystals in a metamorphic or igneous rock or between grains in a sedimentary rock.

Medium grained — Individual grains or crystals between 1 and 5 millimetres in size.

Metamorphic — Rocks derived from pre-existing rocks by mineralogical, chemical and structural changes in response to changes in temperature, pressure, stress and chemical environment at depth in the earth's crust.

Mica — A prominent rock-forming constituent of many igneous and metamorphic rocks, commonly occurs as flakes, scales, or shreds. Mica varies in colour from colourless, silvery white, pale brown, or yellow to green or black.

Phenocrysts — Relatively large, conspicuous crystals set in a fine-grained matrix in an igneous rock.

Polished — The description of a dimension stone in which a single polished surface is prepared to reflect light.

Porphyritic — The texture of an igneous rock in which larger crystals (phenocrysts) are set in a finer matrix which may be crystalline or glassy or both.

Quarry — A surficial mine; open workings; usually for dimension stone or gravel and sand.

Quartzite — A very hard metamorphic rock consisting chiefly of quartz grains that have been completely cemented.

Rhodonite — A pale rose-red to red-brown mineral: ($MnSiO_3$). It is often marked by black streaks and veins of manganese oxide. Used as an ornamental stone.

Sandstone — A sedimentary rock composed of rounded to angular sand-sized particles which are more or less united by a cementing material such as calcium carbonate. The particles usually consist of quartz.

Scabbed Texture — A flat facing made up of parallel streaks 3–7 millimetres deep, 5–20 millimetres apart, generally straight, separated by small fractures where rock has split off.

Schist — A strongly foliated metamorphic rock which can be split into thin flakes or slabs due to well-developed parallelism of more than 50 per cent of the minerals present.

Sedimentary — A rock resulting from the consolidation of sediment that accumulated in layers or by precipitation from solution or by organic means such as accumulation of plant and animal debris.

Slate — A fine-grained sedimentary rock which has been metamorphosed to produce cleavage which is independent of original bedding; it splits into thin sheets.

Specific Gravity — The weight of the rock relative to an equal volume of water.

Tooled — Description of a dimension stone surface in which the surface is composed of fine parallel streaks 12 millimetres deep between which the ridge has a rough split texture.

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